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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,905	05/05/2005	Shinya Fujibayashi	62272 (49227)	1714

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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

MAIL DATE	DELIVERY MODE
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09/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/510,905

Applicant(s)

FUJIBAYASHI ET AL.

Examiner

Marc S. Zimmer

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 3-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for some limited subset of all polyurethane resins that exhibit the claimed starting softening temperature and difference between softening starting temperature and softening ending temperature, does not reasonably provide enablement for the other such materials not expressly disclosed by Applicants Specification. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

Applicant has responded to the Examiner's concerns that the scope of enablement may be unclear by inserting the limitations of original claim 2 into claim 1. Ostensibly, this modification was predicated on the Examiner's earlier supposition that all of the materials embraced by claim 2 might inherently possess the combination of claimed starting softening temperature and difference between softening starting temperature and softening ending temperature. *However, Applicant has not verified that, in fact, any resin (A) adhering to all the structural limitations delineated in present claim 1 will necessarily satisfy the property limitations recited earlier in the claims.* Instead, the following is stated:

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"These specificities together with actual results of examples would enable the skilled artisan to make an educated guess as to whether or not the claimed properties would be satisfied with a particular combination of materials furnished in particular amounts."

The Examiner is unconvinced, however, that Examples 10-14 would help the skilled practitioner to ascertain without an unwieldy amount of experimentation the full scope of these claims, particularly since the various polyols, diols, diamines, etc. employed in making those urethane polymers represent only a tiny fraction of all the compounds advocated by Applicant's Specification.

Ohmori et al., U.S. patent # 6,177,508 (equivalent disclosure to JP 11-49948 cited by the ISA), for instance, appears to teach in Example 2 a polyurethane resin that satisfies all of the structural limitations of the claims but is silent as to whether or not both of the aforementioned property conditions are met:

Assuming that hard unit content is any contribution to the structure of the polymer other than the polycaprolactone diol contribution, the hard unit content of the prepolymer is $120/120 + 820 = .13 (100) = 13\%$

A synthetic approach for making the urethane polymer entails reacting 20 parts of the aforementioned prepolymer with 10 parts of blocked isocyanate, 15 parts, of diamine, and 1.5 parts of diethanol amine. Hence the total hard segment content is

$(230)(0.13) + 10 + 15 + 1.5/230 + 10 + 15 + 1.5 = 21.1(100) = 22.1\%$ total hard unit content of the urethane polymer of Example 2

Urea content:

Moles of amine from diamine = $30/170 = 0.176$

Moles of amine from diethanolamine = 0.029

Sum of amine contributions (moles) is $0.176 + 0.129 = 0.205 =$ moles of urea

Weight of urea = $.205(56) = 11.48$

Weight contribution of urea: $11.48/256.5 = 0.45(100) = 4.5\%$

Plugging into relationship (i) with $x = 0$, the urea content limitation is satisfied.

Further, the Examiner acknowledges that it could not be asserted that the softening starting temperature limitation is inherently satisfied given that the abstract states that the PU component has a softening temperature of between 100° C and 160° C. While it may indeed be the case that the polymer obtained upon carrying out the steps in Example 2 satisfy all the conditions of the claim, it would be inappropriate to allege that this is necessarily true. This, in the Examiner's estimation, bolsters the contention that the scope of the claims is still not properly enabled.

If Applicant is able to confirm the Examiner's earlier hypotheses that all urethane polymers adhering to the structural limitations of original claim 2 will also satisfy the property limitations set out in lines 1-5 of the claim, than withdrawal of this rejection would probably be merited. On the other hand, it would then be appropriate to reject at least some of the claims as anticipated by *Ohmori et al.* and possibly others.

The Examiner will, for the time being, abstain from making this rejection final. However, there should be a concerted effort to fully address the concerns raised herein in Applicant's next response.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 4, 2007


MARC S. ZIMMER
PRIMARY EXAMINER